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Home Made Electric Lamp Brooder*

D. C. KENNARD
V. D. CHAMBERLAIN
C. M. FERGUSON
of The Agricultural Experiment Station,
Wooster, and the Ohio State University

War-time restrictions on manufactured farm equipment have resulted in demands for home made equipment. The poultry industry is being asked to increase its 1943 production over that of 1942 by 28 per cent more chickens, 15 per cent more turkeys and 8 per cent more eggs. This will tax every available piece of brooding equipment now on American farms. In Ohio, the 1943 goals are 11 per cent more chickens, 10 per cent more turkeys, and 6 per cent more eggs.

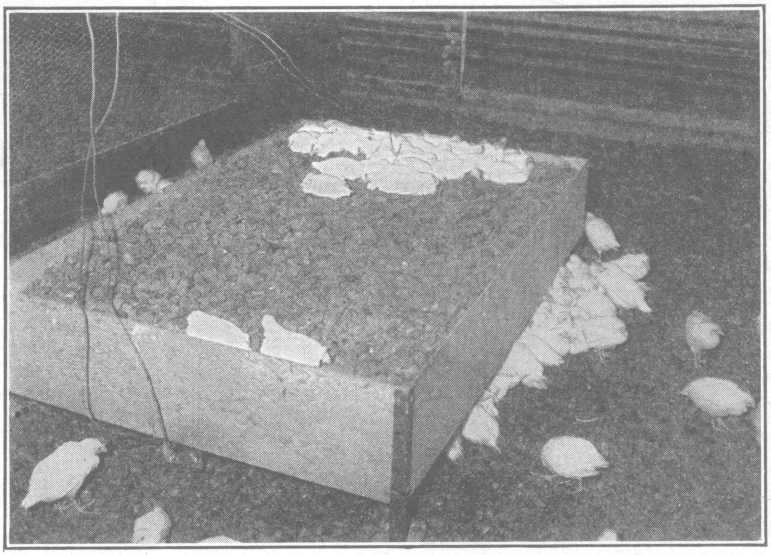

Fig. 1.—The brooder in use. Note that some chicks find a comfortable brooding spot on top of the hover after they are a few weeks old.

The electric lamp brooder described in this pamphlet has been thoroughly tested under both winter and spring brooding conditions at the Ohio Agricultural Experiment Station. These tests conducted over a period of 2 years have proven the practicability of this brooder.

* This bulletin is a reprint of Poultry Pointers No. 70 for December, 1942.

This brooder, as recommended by the Station, is built either 4 feet square or 4 feet wide and 6 feet long. The smaller size is recommended for broods of 200 to 250 chicks. The large size will accommodate 250 to 350 chicks.

It may be constructed of plywood, pressedboard, or, if these materials are not available, ordinary lumber may be used. The sides are 12 inches wide, the ceiling of the hover is placed 4 inches below the top of the sidewall. This 4-inch space is filled with insulation material, such as ground corncobs, shavings, sawdust, or peat moss. The lower edge of the hover sidewall is 4 inches above the top of the floor litter.

For cold weather brooding, a cloth curtain should be attached to the side walls so as to reach from the lower edge of the brooder to the top of the litter.

Electric Lamps Provide Heat

Figure 2 illustrates the method used of installing heating lamps. They are placed at the center of each end of the hover in porcelain sockets. The type and size and number of bulbs used will depend on the outside temperature, age of the chicks, and the availability of the equipment. The following tabulation describes different types of lamps which can be successfully used in this hover.

Type of Lamp	*Volts*†	*Watts*	*Bulb*	*Approx. Hours Life*	*List-Price*
Reflector Flood*	110-120	150	R-40	1000	$ .95
Reflector Flood*	110-120	200	R-40	1000	1.10
Projector Flood*	110-120	150	R-40	1000	1.40
Drying	110-120	250	R-40	5000	1.75
Heat	110-120	250	R-40	Indefinite	2.00
Mazda household bulbs	110-120	100 to 200		1000 to 750	.13 to .27

* Spot lamps may be used in place of flood lamps.
† When possible it is well to secure 120-volt lamps as they last longer than 110 to 115 volt lamps.

The newer type lamps described in the table above as R-40 bulb projector or reflector spot or flood lamps and R-40 bulb drying lamps have been very successful at the Ohio Experiment Station. However, the ordinary Mazda bulbs can be used, if the others are not available.

Operation of the Hover

Under average brooding conditions during April and May or September in a room where supplementary heat is provided, one 250-watt lamp would generally be used during the first week or ten days. After that time, it could be replaced with a 150-watt lamp for the remainder of the brooding period. Toward the end of the brooding period, only an attraction light is necessary. Small Mazda bulbs could be used for this purpose. When no supplementary heat is used, it is generally necessary to use two lamps during the first week or two.

Since the chicks are the guide to follow (rather than thermostatic heat control) in this type of hover, the operator judges the amount of heat needed by the behavior of the chicks. If the chicks spread out and appear comfortable (as in Figure 3), the amount of heat is about right. If they tend to crowd up, larger bulbs should be added or curtains attached. If there is too much heat, the chicks will be driven out from under the hover.

During cold weather, curtains are recommended. These should be 8 inches wide and hemmed at the bottom. They need not be slit. These curtains may be tacked to the hover and permitted to extend down almost to the litter. They conserve heat and avoid floor drafts. A curtain may be used on one, two, three, or four sides as may be necessary. The curtains may be eliminated from one or two sides of the hover as the chicks become older.

It is advisable to use a corrugated cardboard band placed 1 or 2 feet away from the hover for the first few days. These bands can be bought from poultry supply houses.

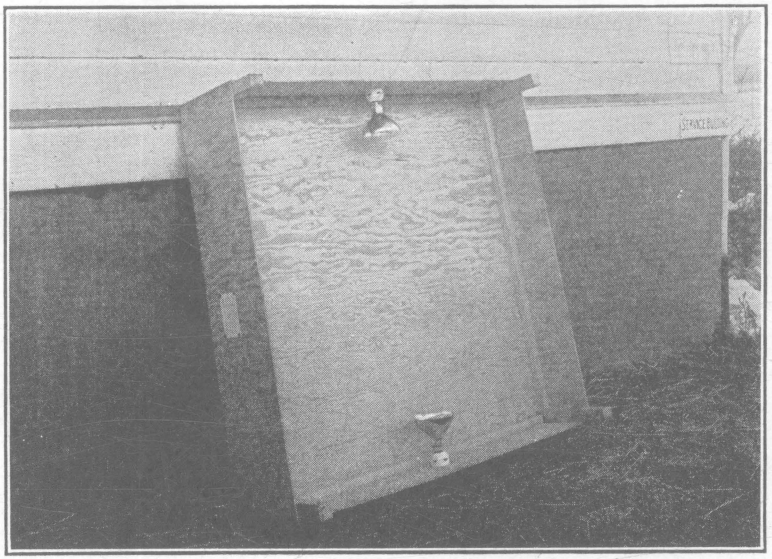

Fig. 2.—The inside of the 4- x 4-foot hover equipped with two lamps.

To provide more ventilation and to reduce the temperature, the hover may be raised by placing blocks under the legs.

Chicks can be fed and watered under the hover for the first two or three days during cold weather.

Cost of Operation

Tests at the Experiment Station indicate that the total cost of electricity during the 6-week brooding period in April and May was approximately $5.25, figuring electric current at 3 cents per KWH. Cost during cold winter weather will be somewhat higher but during warmer weather will be appreciably less. The litter insulation on the top of the brooder aids in heat conservation.

Litter for Brooder Houses

Experience has proven the value of heavy litter for brooding chicks. Four inches of ground corncobs, shavings, sawdust, peat moss, or other fine material keeps the floor warm. These litters should be thoroughly stirred each day with a fork or floor scraper. This stirring aids in keeping the litter dry, prevents packing and the accumulation of droppings on top of the litter. Under this method it is seldom necessary to change litter during the average brooding period.

Bill of Material for 4′ x 4′ Brooder

One piece of 4- by 8-foot, ¼-inch plywood or ⅛-inch pressedboard (to be cut into one 4- by 4-foot top and four 1- by 4-foot sides).

Four cleats 1 inch by 1 inch, 4 feet long, to which the top and sides are nailed.

Four pieces of 1½- by 1½-inch lumber, 16 inches long, for corner posts or legs.

Two porcelain electric lamp bulb sockets. (Porcelain lamp sockets are necessary for these lamps.)

One 150-watt, 115- or 120-volt projector or reflector Mazda spot or flood lamp and one 250-watt R-40 bulb drying lamp or heat lamp.

Twenty feet of well insulated electric appliance cord with plug and cap.

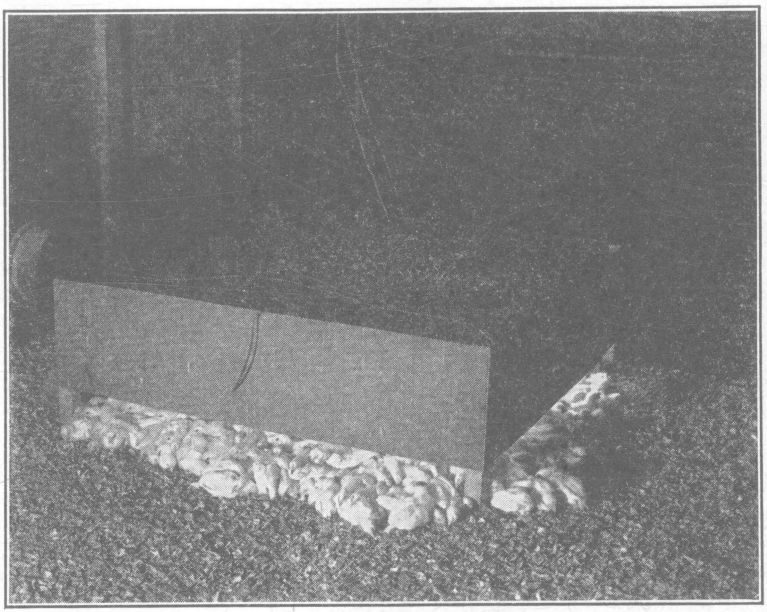

Fig. 3.—Since these brooders are not thermostatically controlled, the poultryman must use his own judgment as to the size of bulbs necessary to produce satisfactory brooding conditions. Here the chicks are comfortably spread out.

The Ohio State University, Cooperating with the United States Department of Agriculture
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